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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PATEL, NIMESH G	
ART UNIT	**PAPER NUMBER**
2112	

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	09/921,278	MULLER ET AL.	
	Examiner	Art Unit	
	Nimesh G Patel	2112	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 30 June 2004.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 23-67 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 23-67 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 02 August 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 25, 30, 36, 43, 49, 54, 60 and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "substantially greater" in claims 25 and 49 is a relative term, which renders the claims indefinite. The term "substantially greater" is not defined by the respective claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Therefore, the recited limitation "the lead time" in line 4 of the respective claims is rendered indefinite.

4. Claims 30 and 54 recite the limitation "the count register" in line 3 of the claims. There is insufficient antecedent basis for this limitation in the respective claims.

5. Claims 36 and 60 recite the limitation "the one or more of the scheduled target function" in line 1 of the claims. There is insufficient antecedent basis for this limitation in the respective claims.

6. Claims 43 and 66 recite the limitation "the original function" in line 1 and 3, respectively of the claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 23, 26-28, 41-47, 50-52, and 64-67are rejected under 35 U.S.C. 102(b) as being anticipated by Mulholland et al.('905), hereinafter referred to as Mulholland.

9. Regarding claim 23, Mulholland discloses a method for a scheduled execution of a target function(Figure 5, DosIdle Function) by a processor of a computer at predetermined times, wherein the processor comprises a first interrupt input operable to receive a first interrupt signal(Column 3, Lines 5-15), the method comprising: executing a start function(DosTimer Function), wherein the start function is executed by the processor as a first interrupt service routine(Column 6, Lines 24-26), wherein the start function is executed in response to triggering of the first interrupt signal; the start function repeatedly reading a computer register(Column 6, Lines 52-53) to obtain a read value; the start function comparing the read value with a reference value(IntervalTicks; Column 6, Lines 54-56), wherein the reference value corresponds to a predetermined time(Column 4, Lines 23-24; Column 5, Lines 23-29); and executing the target function in the processor, wherein the start function is operable to initiate said executing the target function(Column 7, Lines 18-19; Column 6, Lines 58-61; The DosTimer Function sets the DoUpdateFile Flag and therefore initiates the execution of the target function(DosIdle Function)).

10. Regarding claim 26, Mulholland discloses a method, wherein the computer register comprises a count register(Column 6, Line 52; TicksLeft).

11. Regarding claim 27, Mulholland discloses a method, wherein the count register comprises a time stamp counter of the processor(Time stamp counter is part of modern Pentium CPUs and is used as a count register).

12. Regarding claim 28, Mulholland discloses a method, wherein the first interrupt signal is triggered by a computer timer as a timer interrupt(Column 6, Lines 24-26).

13. Regarding claim 41, Mulholland discloses a method, further comprising: changing value of the register by the start function; wherein said changing value of the register comprises pushing the register contents onto a computer stack at a beginning of the start function, and wherein the value of the register are written back into the register at an end of the start function(Column 6, Line 52; It is inherent to handle ISRs using PUSH and POP commands to save and restore the state of the system).

14. Regarding claim 42, Mulholland discloses a method, further comprising: determining a currently executed interrupt by reading a register of an interrupt controller at a beginning of the start function(It is inherent the register in the interrupt controller gives information on interrupts; and acknowledging processing of the current interrupt request by an end-of-interrupt command (EOI) after said determining the currently executed interrupt(It is inherent the EOI would acknowledge the processing of the interrupt).

15. Regarding claim 43 as best understood, Mulholland discloses a method, further comprising: activating the original function, wherein said activating the original function comprises activating the original function by using a jump command by means of the start function(Figure 4, 302; Once the start function is finished, the function returns(jumps) to the original function).

16. Regarding claim 44, Mulholland discloses a method, further comprising: the start function determining existence of an additional interrupt signal at the first interrupt input; wherein the start function is operable to send an error to the target function if said determining the existence of the additional interrupt signal is true(Column 6, Lines 40-50).

17. Regarding claim 45, Mulholland discloses a method, further comprising: loading a software program into memory of the computer, wherein the software program is operable to said execute the start function, said repeatedly read the computer register, said compare the read value with a reference value, and said execute the target function in the processor(Column 3, Lines 5-15).

18. Regarding claim 46, Mulholland discloses a machine-readable data carrier with a software program stored on the data carrier, wherein the software program implements a method for the scheduled execution of the, the software program comprising the steps to: execute a start function(DosTimer Function), wherein the start function is executed by the processor as an interrupt service routine(Column 6, Lines 24-26); repeatedly read a computer register to obtain a read value(Column 6, Lines 52-53), wherein said repeatedly reading comprises the start function repeatedly reading the computer register; compare the read value with a reference value(IntervalTicks; Column 6, Lines 54-56), wherein the reference value corresponds to a predetermined time(Column 4, Lines 23-24; Column 5, Lines 23-29); and execute the target function in the processor(Column 7, Lines 18-19; Column 6, Lines 58-61; DosIdle Function).

19. Regarding claim 47, Mulholland discloses a machine-readable data carrier, wherein said comparing the read value comprises the start function repeatedly comparing the read value(Column 6, Lines 52-53).

20. Regarding claim 50, Mulholland discloses a machine-readable data carrier, wherein the computer register comprises a count register(Column 6, Line 52; TicksLeft).

21. Regarding claim 51, Mulholland discloses a machine-readable data carrier, wherein the count register comprises a time stamp counter of the processor(Time stamp counter is part of modern Pentium CPUs and is used as a count register).

22. Regarding claim 52, Mulholland discloses a machine-readable data carrier, wherein the interrupt signal is triggered by a computer timer as a timer interrupt(Column 6, Lines 24-26).

23. Regarding claim 64, Mulholland discloses a machine-readable data carrier, further comprising: changing value of the register by the start function; wherein said changing value of the register comprises pushing the register contents onto a computer stack at a beginning of the start function, and wherein the value of the register are written back into the register at an end of the start function(Column 6, Line 52; It is inherent to handle ISRs using PUSH and POP commands to save and restore the state of the system).

24. Regarding claim 65, Mulholland discloses a machine-readable data carrier, further comprising: determining a currently executed interrupt by reading a register of an interrupt controller at a beginning of the start function(It is inherent the register in the interrupt controller gives information on interrupts; and acknowledging processing of the current interrupt request by an end-of-interrupt command (EOI) after said determining the currently executed interrupt(It is inherent the EOI would acknowledge the processing of the interrupt).

25. Regarding claim 66 as best understood, Mulholland discloses a machine-readable data carrier, further comprising: activating the original function, wherein said activating the original function comprises activating the original function by using a jump command by means of the start function(Figure 4, 302; Once the start function is finished, the function returns(jumps) to the original function).

26. Regarding claim 67, Mulholland discloses a machine-readable data carrier, further comprising: the start function determining existence of an additional interrupt signal at the first interrupt input; wherein the start function is operable to send an error to the target function if said determining the existence of the additional interrupt signal is true(Column 6, Lines 40-50).

Claim Rejections - 35 USC § 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

28. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

29. Claims 24 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulholland, in view of Chih-Hao Tsai(PCTimer: Millisecond Resolution Timing with DJGPP V2 and DPMI), hereinafter referred to as Tsai.

30. Regarding claim 24, Mulholland discloses a method, wherein the first interrupt signal is triggered by a timer(Column 6, 24-26)

Mulholland does not specifically disclose the timer being programmed with the reference value by the start function. However, Tsai discloses the operating system having the ability to program the timer(Pages 2-3). It would have been obvious to program the timer, as disclosed by Tsai, to the reference value in Mulholland's system, since this would allow the timer interrupt to be triggered before a predetermined time, ensuring the target function gets executed at the predetermined time.

31. Regarding claim 48, Mulholland discloses a machine-readable data carrier, wherein the interrupt signal is triggered by a timer(Column 6, 24-26).

Mulholland does not specifically disclose the timer being programmed with the reference value by the start function. However, Tsai discloses the operating system having the ability to program the timer(Pages 2-3). It would have been obvious to program the timer, as disclosed by Tsai, to the reference value in Mulholland's system, since this would allow the timer interrupt to be triggered before a predetermined time, ensuring the target function gets executed at the predetermined time.

32. Claim 25, 29-36, 39-40, 49, 53-60, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulholland, in view of Lever('840).

33. Regarding claim 25 as best understood, Mulholland discloses a method, wherein the first interrupt signal is triggered with a lead time before the predetermined time(Column 5, Lines 27-29; Timer interrupt is executed 1090.9 times per minute, which means the interrupt signal is triggered before the predetermined time of 30 minutes)

Mulholland does not specifically disclose the lead time being greater than an expected maximum delay between appearance of the first interrupt signal at the first interrupt input of the processor and said executing the start function. However, Lever discloses calculating maximum delay(Column 2, Line 60-Column 3 Line 10) between the appearance of the interrupt signal and the execution of the start function. It would have been obvious to calculate the maximum delay, as disclosed by Lever, in Mulholland's system to have the lead time greater than the maximum delay, since this would guarantee the execution of the target function at the predetermined time.

34. Regarding claim 29, Mulholland does not specifically disclose a method, wherein an expected maximum delay is determined continuously. However, Lever discloses a method, wherein an expected maximum delay is determined continuously(Column 3, Lines 30-31). It

would have been obvious to continuously determine an expected maximum delay, as disclosed by Lever, in Mulholland's system, since this would guarantee the execution of the target function at the predetermined time.

35. Regarding claim 30 as best understood, Lever discloses a method, wherein the value for the expected maximum delay is determined by using an actual delay, wherein the actual delay is determined by reading the count register at the beginning of the start function and by subtracting the value representing time of appearance of the first interrupt signal(Column 2, Line 60-Column 3 Line 5).

36. Regarding claim 31, Mulholland and Lever do not specifically disclose a method, wherein the expected maximum delay is determined by multiplying the actual delay by a safety factor. However, it would be obvious to have a safety factor, since this would guarantee the interrupt would be called before the predetermined time.

37. Regarding claim 32, Lever discloses a method, further comprising: setting value of a lead time substantially equal to the expected maximum delay when the expected maximum delay exceeds an upper limit(Column 7, Lines 60-64).

38. Regarding claim 33, Lever discloses a method, further comprising: generating an error when the expected maximum delay exceeds an upper limit(Column 7, Lines 60-64).

39. Regarding claim 34, Mulholland discloses a method, wherein a timer interrupt is operable to be used by other programs running simultaneously on the computer to call an original function(It is inherent that other programs use timer interrupt to call the original function).

40. Regarding claim 35, Mulholland discloses a method further comprising: reading an address of the original function from an interrupt table, wherein the interrupt table contains one or more addresses of service routines associated with one or more interrupt inputs, and

replacing the address of the original function by the address of the start function in the interrupt table(Column 5, Lines 43-47).

41. Regarding claim 36 as best understood, Mulholland discloses a method wherein one or more of the scheduled target function and the original function are operable to be executed by an interrupt request by means of the start function(Column 5, Lines 43-47).

42. Regarding claim 39, Mulholland discloses a method, further comprising: upon triggering the first interrupt signal, creating one or more of a list of one or more predetermined times for the execution of the target function(Column 3, Line 60; IntervalMinutes indicates the predetermined times) and a list of one or more times for triggering of the first interrupt signal(Column 5, Lines 25-29; Timer interrupt is triggered 1090.9 times per minute); wherein the start function compares a next time of the execution of the target function with a time of a next interrupt signal and operates to cause execution of the original function if the next interrupt signal appears at least a maximum delay before a next time of execution of the target function(Column 6, Lines 56-61; If the predetermined time has not been reached, the original function is executed. The next signal interrupt signal will appear at least the maximum delay before the next appearance of the interrupt signal since the timer interrupt is triggered at a much greater rate than the Target function(1090.9 times per minute compared to once every 30 minutes(default interval))).

43. Regarding claim 40, Mulholland discloses a method further comprising: upon triggering the first interrupt signal, creating one or more of a list of one or more predetermined times for the execution of the target function(Column 3, Line 60; IntervalMinutes indicates the predetermined times) and a list of one or more times for execution of the original function(Column 5, Lines 25-29; Timer interrupt is triggered 1090.9 times per minute, which corresponds to the original function), wherein the start function compares a next time of the

execution of the target function with a time of a next time of execution of the original function and operates to cause execution of the original function if the next time of execution of the original function appears at least a maximum delay before a next time of execution of the target function.

44. Regarding claim 49 as best understood, Mulholland discloses a machine-readable data carrier, wherein the interrupt signal is triggered with a lead time before the predetermined time(Column 5, Lines 27-29; Timer interrupt is executed 1090.9 times per minute, which means the interrupt signal is triggered before the predetermined time of 30 minutes)

Mulholland does not specifically disclose the lead time being greater than an expected maximum delay between appearance of the interrupt signal at the interrupt input of the processor and said executing the start function. However, Lever discloses calculating maximum delay(Column 2, Line 60-Column 3 Line 10) between the appearance of the interrupt signal and the execution of the start function. It would have been obvious to calculate the maximum delay, as disclosed by Lever, in Mulholland's system to have the lead time greater than the maximum delay, since this would guarantee the execution of the target function at the predetermined time.

45. Regarding claim 53, Mulholland does not specifically disclose a machine-readable data carrier, wherein an expected maximum delay is determined continuously. However, Lever discloses a method, wherein an expected maximum delay is determined continuously(Column 3, Lines 30-31). It would have been obvious to continuously determine an expected maximum delay, as disclosed by Lever, in Mulholland's system, since this would guarantee the execution of the target function at the predetermined time.

46. Regarding claim 54 as best understood, Lever discloses a machine-readable data carrier, wherein the value for the expected maximum delay is determined by using an actual delay, wherein the actual delay is determined by reading the count register at the beginning of

the start function and by subtracting the value representing time of appearance of the interrupt signal(Column 2, Line 60-Column 3 Line 5).

47. Regarding claim 55, Mulholland and Lever do not specifically disclose a machine-readable data carrier, wherein the expected maximum delay is determined by multiplying the actual delay by a safety factor. However, it would be obvious to have a safety factor, since this would guarantee the interrupt would be called before the predetermined time.

48. Regarding claim 56, Lever discloses a machine-readable data carrier, further comprising: setting value of a lead time substantially equal to the expected maximum delay when the expected maximum delay exceeds an upper limit(Column 7, Lines 60-64).

49. Regarding claim 57, Lever discloses a machine-readable data carrier, further comprising: generating an error report when the expected maximum delay exceeds an upper limit(Column 7, Lines 60-64).

50. Regarding claim 58, Mulholland discloses a machine-readable data carrier, wherein a timer interrupt is operable to be used by other programs running simultaneously on the computer to call an original function(It is inherent that other programs use the timer interrupt to call the original function).

51. Regarding claim 59, Mulholland discloses a machine-readable data carrier further comprising: reading an address of the original function from an interrupt table, wherein the interrupt table contains one or more addresses of service routines associated with one or more interrupt inputs, and replacing the address of the original function by the address of the start function in the interrupt table(Column 5, Lines 43-47).

52. Regarding claim 60 as best understood, Mulholland discloses a machine-readable data carrier, wherein one or more of the scheduled target function and the original function are

operable to be executed by an interrupt request by means of the start function(Column 5, Lines 43-47).

53. Regarding claim 63, Mulholland discloses a machine-readable data carrier, further comprising: upon triggering the interrupt signal, creating one or more of a list of one or more predetermined times for the execution of the target function(Column 3, Line 60; IntervalMinutes indicates the predetermined times) and a list of one or more times for triggering of the interrupt signal(Column 5, Lines 25-29; Timer interrupt is triggered 1090.9 times per minute); wherein the start function compares a next time of the execution of the target function with a time of a next interrupt signal and operates to cause execution of the original function if the next interrupt signal appears at least a maximum delay before a next time of execution of the target function(Column 6, Lines 56-61; If the predetermined time has not been reached, the original function is executed. The next signal interrupt signal will appear at least the maximum delay before the next appearance of the interrupt signal since the timer interrupt is triggered at a much greater rate than the Target function(1090.9 times per minute compared to once every 30 minutes(default interval))).

54. Claims 37-38 and 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulholland, in view of Lever, and in further view of Tsai.

55. Regarding claim 37, Mulholland and Lever do not specifically disclose a method, wherein the timer is operable to be adjusted to a clock rate by the operating system, and wherein the timer is operable to be set to a maximum clock rate prior to said repeatedly reading. However, Tsai discloses the operating system having the ability to adjust the timer to various clock rates(Pages 2-3). It would have been obvious to adjust the timer clock rate, as disclosed by Tsai, to the maximum clock rate in the system of Mulholland and Lever, since this would

allow the timer interrupt to be triggered more often, ensuring the target function gets executed at the predetermined time.

56. Regarding claim 38, Tsai disclose a method, wherein the clock rate of the timer is changed and reset to the maximum clock rate prior to said executing the start function(Page 3).

57. Regarding claim 61, Mulholland and Lever do not specifically disclose a machine-readable data carrier, wherein the timer is operable to be adjusted to a clock rate by the operating system, and wherein the timer is operable to be set to a maximum clock rate prior to said repeatedly reading. However, Tsai discloses the operating system having the ability to adjust the timer to various clock rates(Pages 2-3). It would have been obvious to adjust the timer clock rate, as disclosed by Tsai, to the maximum clock rate in the system of Mulholland and Lever, since this would allow the timer interrupt to be triggered more often, ensuring the target function gets executed at the predetermined time.

58. Regarding claim 62, Tsai disclose a machine-readable data carrier, wherein the clock rate of the timer is changed and reset to the maximum clock rate prior to said executing the start function(Page 3).

Response to Arguments

59. Applicant's arguments filed June 30, 2004 have been fully considered but they are not persuasive. Applicant argues that Mulholland does not teach "if the predetermined time has been reached, the method operates to execute the target function." However, as stated in the above rejection, Mulholland does teach this limitation. Applicant further argues that Mulholland does not teach "the target function is executed directly from the Start Function." However, this is not claimed in any of the claims. Applicant also argues that Mulholland does not teach "the timer interrupt being able to call the original function." However, the original function is not replaced

by the DosTimer Function; it is chained(Column 5, Lines 36-48). Therefore both the DosTimer function and the original function are called on each Dos timer tick.

Conclusion

60. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nimesh G Patel whose telephone number is 571-272-3640. The examiner can normally be reached on M-F, 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H Rinehart can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nimesh G Patel
Examiner
Art Unit 2112

NP NP
October 4, 2004

MARK H. RINEHART
SUPERVISORY PATENT EXAMINER
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